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PLANETARY PHENOMENA FOR MAY AND JUNE,
1908.

BY MALCOLM MCNEILL.

PHASES OF THE MOON, PACIFIC TIME.

| | | | |
|-----------------|--|------------------|---|
| First Quarter.. | May 8, 3 ^h 23 ^m A.M. | First Quarter... | June 6, 8 ^h 56 ^m P.M. |
| Full Moon..... | " 15, 8 32 P.M. | Full Moon..... | " 14, 5 55 A.M. |
| Last Quarter... | " 22, 4 17 P.M. | Last Quarter... | " 20, 9 26 P.M. |
| New Moon..... | " 29, 7 14 P.M. | New Moon..... | " 28, 8 31 A.M. |

There will be an annular eclipse of the Sun on June 28th, which will be visible as a partial eclipse throughout the United States. The path of central eclipse begins in the Pacific Ocean, passes through Mexico and southern Florida, across the Atlantic, and ends in Africa. The annular eclipse of the Sun does not compare in interest to the total eclipse, as the disk of the Sun is at no time completely covered, and there is therefore no opportunity for study of the corona and other outer layers of the Sun's atmosphere, which do not come into good view except when the part of the Sun ordinarily visible is completely hidden by the Moon.

The Sun reaches the summer solstice and summer begins on June 21st, at noon, Pacific time.

Mercury passes superior conjunction and becomes an evening star on May 7th. It reaches greatest east elongation, $23^{\circ} 59'$, on June 7th, and reaches inferior conjunction on July 4th. From about the middle of May until after the middle of June it remains above the horizon more than an hour after sunset, and just about the time of greatest elongation, early in June, the interval is nearly two hours. For some weeks it may be seen in the evening twilight without difficulty. The number of days when the planet is visible is much greater than at average greatest elongations. The greatest elongation, $23^{\circ} 59'$, is somewhat above the average; but the planet comes to its aphelion about two weeks after, and this prolongs the period between greatest elongation and inferior conjunction. This interval is twenty-eight days, a long one as compared with the sixteen days at the previous appearance of the planet in February.

The relative motions of *Mars* and *Mercury* during June are interesting. *Mars* is moving rather steadily eastward and a little southward at the rate of about $42'$ per day. At the

beginning of the month *Mercury* is about 4° west and north of *Mars*, and is moving in the same general direction, but at a considerably greater rate. It passes *Mars* on the morning of June 7th, the least distance between the planets being only $19'$. But the speed of *Mercury* has been diminishing, and on the morning of June 17th *Mars* overtakes and passes *Mercury*. Between the two dates the planets are never much more than 1° apart. *Mercury's* eastward motion ceases on June 21st, and it then begins to retrograde. The same thing happens with *Mercury* and *Neptune*, the two planets being in conjunction twice, on June 10th and on June 30th.

Venus is an evening star and passed greatest east elongation on April 26th. On May 1st it remains above the horizon about four hours after sunset, nearly the maximum possible in our latitude. The interval diminishes, and on June 1st it is only three hours. During June it diminishes with still greater rapidity, and at the end of the month it is only a little more than a quarter of an hour. The planet will reach inferior conjunction with the Sun on July 5th. During the whole period the planet will be very bright, the maximum being reached on May 29th, a time midway between the dates of greatest elongation and inferior conjunction. For some weeks before and after the time of greatest brightness the planet will be brilliant enough to be seen in full daylight. *Venus* is in conjunction with *Neptune* on the morning of May 21st, and with *Mars* on June 22d.

Mars is still an evening star, but the Sun is overtaking it in their common eastward motion, the distance between them diminishing from 37° to 18° during the two months' period. On May 1st it sets about three hours after sunset, and at the end of June only one hour after. It will not be easy to see toward the end of June, being so near the Sun, and also because it has nearly reached its minimum brightness. It will then be distant from the Earth about 240,000,000 miles, within 8,000,000 of the maximum distance.

Jupiter is still in good position for observation in the western sky in the evening. On May 1st it sets at about 1^{h} A.M., and on June 30th at about $9^{\text{h}} 30^{\text{m}}$ P.M. During the two months' period it moves from *Cancer* to the western part of *Leo*, about 10° eastward and southward, and on June 30th it is about 12° west and north of *Regulus*, the brightest star in *Leo*.

Saturn is now a morning star, rising at a little before 4^h A.M. on May 1st, and at about midnight on June 30th. It is rather too near the Sun to be at all conspicuous at the former date, but the distance grows greater rapidly, and it will soon be easy to see in the morning twilight. During May and June it moves 6° eastward and 2° northward in the constellation *Pisces*. During the spring months the Earth has been moving farther away from the plane of the rings, and the apparent minor axis has therefore been increasing, so that at the end of June it is about one seventh the major axis, and about one third of the diameter of the ball of the planet. A small telescope will now show the rings easily.

Uranus rises at about midnight on May 1st, and very shortly after sunset on June 30th. It remains in *Sagittarius* and moves about 2° westward in the two months' period. The nearest bright stars are the "milk-dipper" group, and the planet is about 5° north and east of the nearest one.

Neptune is in the western sky in the evening. It is in the constellation *Gemini*, and by the end of June has nearly reached conjunction with the Sun.

(SIXTY-THIRD) AWARD OF THE DONOHUE
COMET-MEDAL.

The Comet-Medal of the Astronomical Society of the Pacific has been awarded to J. GRIGG, Esq., Thames, New Zealand, for his discovery of an unexpected comet on April 9, 1907.

Committee on the Comet-Medal:

W. W. CAMPBELL,

C. D. PERRINE,

SAN FRANCISCO, March 26, 1908.

CHAS. BURCKHALTER.

(SIXTY-FOURTH) AWARD OF THE DONOHUE
COMET-MEDAL.

The Comet-Medal of the Astronomical Society of the Pacific has been awarded to Mr. J. E. MELLISH, Madison, Wisconsin, for his discovery of an unexpected comet on October 13, 1907.

Committee on the Comet-Medal:

W. W. CAMPBELL,

C. D. PERRINE,

SAN FRANCISCO, March 26, 1908.

CHAS. BURCKHALTER.